

We claim:

1. 1. A method for transmitting DS1 and NDSI over a communication link of a
2 communication network, the method comprising the steps of:
3 transmitting fragmented NDSI in accordance with a network protocol
4 where the fragmenting is based on parameters of received DS1 and is performed in
5 accordance with a network layer protocol.
1. 2. The method of claim 1 wherein the step of transmitting NDSI comprises:
2 calculating a fragmentation requirement for each received initial DS1;
3 reviewing the fragmentation requirements of the received DS1 after a new
4 DS1 requirement was calculated or after transmission of a DS1 was
5 terminated to determine a fragmentation requirement that is most
6 restrictive; and
7 altering the fragmenting of NDSI to comply with the most
8 restrictive fragmentation requirement.
1. 3. The method of claim 1 further comprising the step of transmitting DS1 in accordance
2 with required timing relationships and transmitting NDSI in a non-fragmented manner
3 when there are no DS1 to be transmitted.
1. 4. The method of claim 1 where the network protocol is an OSI-based layer 3 protocol.
1. 5. The method of claim 1 where the fragmenting is further based on information rate of
2 the communication link.
1. 6. The method of claim 1 where the parameters of the received DS1 comprise such
2 variables as information compression, sample rate of DS1, number of communication

3 channels included in the DS1, amount of overhead information included in the DS1 and
4 amount of subscriber information in the DS1.

1 7. An apparatus for transmitting DS1 and NDSI over a communication link of a
2 communication network where the apparatus fragments the NDSI in accordance with a
3 network layer protocol and based on parameters of received DS1.

1 8. The apparatus of claim 7 configured as an IAD coupled to subscriber equipment and
2 to an access network.

1 9. The apparatus of claim 7 configured as host equipment network where such host
2 equipment is coupled to a packet based communication network and to an access
3 network.